AMENDMENTS TO SPECIFICATION

[0038] At step 350, planned treatment fields are automatically displayed on the computer workstation display monitor 222. At step 355, a care provider may compare the previously planned positions with the overlaid images to determine any necessary corrections, such as by providing inputs associated with the overlaid images. For example, the care provider may check that the radiation fields are correct and that the set-up required can actually be mechanically achieved. Contouring may also be accomplished ~~is~~ as necessary.

[0044] Persistent and accurate positioning of a patient during therapeutic radiation treatment is desirable to prevent damaging healthy tissue. Figure 3 illustrates one embodiment of a process (e.g. process 400) to position a patient for radiotherapy. At step 410, a digital image of a patient including a target volume is displayed on the computer workstation 220. At step 420, an outline of the treatment area is traced (e.g., contouring) on the digital image (e.g., two-dimensional image) of the patient on the display monitor 222. At step 430, the traced image of the outline is superimposed or projected onto the patient. For example, this allows for the viewing and verification of MLC leaf positions or other shielding devices defined in the treatment plan.

[0051] Figure 4 illustrates one embodiment of correcting lag (e.g. process 500) in a flat panel imager during fluoroscopic imaging on the simulator device. At step 510, the gantry is rotated to a field setup position about the patient while capturing fluoroscopic images of a target volume. At step 520, the lag of a flat panel image is automatically corrected while performing the fluoroscopic images. That is, a correction will be made for any leakage (or lag) of a current generated when the radiation impinges on the imager during fluoroscopic imaging (e.g., 15 to 30 frames per second). By way of example, U.S. provisional patent application serial no. 60/419,132 entitled "Method and Apparatus for Non-Linear Background and Lag Correction of Large Area, Flat Panel Image Sensors," filed on October 16 2002,

discloses an exemplary lag correction method, hereby incorporated by reference in its entirety.

[0052] Figure 5 illustrates one embodiment of performing an image-guided brachytherapy treatment (e.g. process 600) on the simulation treatment system 100. At step 610, the simulation treatment system 100 receives digital images of a treatment plan showing the position of a target volume. At step 620, the simulation treatment system 100 generates digital fluoroscopic image(s) of a target volume. At step 630, a care provider ensures the placement of a catheter or seed for brachytherapy based on the images. In one embodiment, a catheter is placed near the target volume based on the images and a radioactive isotope is placed into the catheter to deliver treatment to the target volume. In another embodiment, one or more seeds are placed near the target volume based on the images. In this way, fluoroscopic images are used for visualizing and verifying anatomy during the placement of catheters and seeds, without having to move the patient.